



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

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January 29, 2016

Mr. Ernie Laberge  
Adhesive Applications, Inc.  
41 O'Neill Street  
Easthampton, MA 01027

**RE: Easthampton**  
Transmittal No.: X268193  
Application No.: WE-15-015  
Class: *SM-50*  
FMF No.: 25961  
**AIR QUALITY PLAN APPROVAL**

Dear Mr. Laberge:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Air and Waste, has reviewed your Non-major Comprehensive Plan Application ("Application") listed above. This Application concerns the proposed construction and operation of a Catalytic Products International recuperative thermal oxidizer at your facility located at 41 O'Neill Street in Easthampton, Massachusetts ("Facility"). The Application bears the seal and signature of David P. Horowitz, Massachusetts Registered Professional Engineer Number 46271.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control" regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-N, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

## 1. DESCRIPTION OF FACILITY AND APPLICATION

Adhesive Applications, Inc. (formerly known as Adhesive Application, Inc. – Stik II Division) manufactures packing and sealing devices and pressure sensitive tapes. The tape consists of closed-cell polyethylene foam which is coated with a solvent-based<sup>1</sup> adhesive with either a synthetic rubber or an acrylic base. The facility has also developed a line of removable products, with permanent adhesive on one side and removable adhesive on the other, as well as removable adhesive on both sides. The facility's products are used by automotive, electronic, plastics molders and extruders, appliance, furniture, and window and door manufacturers.

The Facility has three existing coating lines that were previously approved: Coaters #1, #2 and #3. This current Plan Approval is for the addition of a third thermal oxidizer which will control volatile organic compounds (VOCs) and Hazardous Air Pollutants (HAPs) from Coaters #2 and #3. For Convenience, this Plan Approval #WE-15-015 incorporates emission limits and compliance demonstration requirements from the Facility's two previous Plan Approvals. The following table summarizes the Facility's current Plan Approvals:

Emission Unit	Plan Approval #, Date
<u>EU #1</u> - Coater #1 ("Stik II" Surface Coating Line) <u>EU #2</u> - Coater #2 ("DPI" surface coating line)	#1-P-10-036, 12/28/2010; and #WE-14-010, 9/22/2014
<u>EU #3</u> - Coater #3 (formerly a research & development coater)	#WE-14-010, 9/22/2014

Plan Approval 1-P-10-036 carried over the approval of the Stik II coating line and added the DPI coating line. It also approved the installation of a new Anguil regenerative thermal oxidizer (RTO) to replace an existing one at that time. Plan Approval 1-P-10-036 superseded all previous Plan Approvals.

Plan Approval WE-14-010 was for the conversion of a former research and development coater to a production coater as well as the installation of two CIRE Technologies, Inc. RTOs to replace the Anguil RTO. This Plan Approval added cleaning operations and Mix Room/Flammable Storage Room operations.

The facility conducts coater head cleaning operations using methyl ethyl ketone (MEK) as a solvent. A Permanent Total Enclosure (PTE)<sup>2</sup> surrounds each coating head. In addition, the facility's Mix Room/Flammable Storage Room is monitored to confirm a PTE. All PTEs are

<sup>1</sup> Solvent-based is defined herein as a coating/cleaning solution with a VOC/HAP content greater than 0.2 pounds per pound of solids applied and greater than 3% by weight before control.

<sup>2</sup> Demonstrated by compliance with EPA Method 204.

routed to a thermal oxidizer during cleaning or mixing operations. A detailed description of these operations can be found in Plan Approval #WE-14-010 (dated 9/22/14).

### **Project Description – Recuperative Thermal Oxidizer**

The proposed Catalytic Product International (CPI) QUADRANT SRS-14,000 recuperative thermal oxidizer will provide redundant VOC and HAP emission control of EU #2, EU #3 and the facility's mix room. To prevent coating line down-time, the thermal oxidizer is designed for the easy clean-out of silicone-based deposits which can interfere with the control device efficiency. Pressure monitoring devices will be installed to monitor the pressure drop across the combustion chamber to the stack to allow tracking of silica build-up.

The new thermal oxidizer will have a maximum inlet capacity of 14,000 standard cubic feet per minute and will be equipped with a Maxon Circular IncinoPak (or equivalent) natural gas-fired burner with a maximum total installed heat input capacity of 8 million British thermal units per hour (MMBtu/hr). The thermal oxidizer is designed for a minimum residence time of 1.21 seconds. The minimum operating temperature, as measured at the downstream end of the combustion chamber, will be 1400°F. The unit will be heated to 1,500°F prior to processing exhaust from the coaters. The conditions within the combustion chamber will be controlled by a Honeywell series 7890 controller.

Maximum air flow from Coaters #2 and #3 and the Mix Room/Flammable Storage Room will be less than the maximum design capacity of the proposed thermal oxidizer (12,000 actual cubic feet per minute (acfm) at 300°F, 1,000 acfm at 300°F, and 1,000 acfm at ambient temperature, respectively). The system will be interlocked with linked motorized isolation dampers including limit switches to prove the position of the damper; all of which report to the programmable logic controller (PLC).

If the combustion temperature drops to 1,450°F, an audible and visible alarm will sound and the thermal oxidizer burner will be automatically fired with natural gas to maintain the combustion chamber temperature above 1,400°F. A continuous chart recorder will monitor the thermal oxidizer operating temperature at the downstream end of the combustion chamber.

### **BACT Determination**

In order to maintain the best available control technology (BACT) requirements established in Plan Approval #1-P-10-036 (12/28/10) and #WE-14-010 (9/22/14), Adhesive Applications, Inc. has proposed the following:

- Coating operators will sign off on all water-based/solvent-based coating changes;
- When applying water-based coatings, emissions will be vented to atmosphere;

- When applying a solvent-based coating/cleaning solution:
  - Emissions from all three coaters will be captured at 100% PTE (demonstrated by compliance with EPA Method 204) and vented to one of two CIRE Technologies, Inc. RTOs or, in the case of Coaters #2 and #3, could also be routed to the new Catalytic Products International thermal oxidizer. All three thermal oxidizers are guaranteed to achieve a minimum 99% destruction efficiency of VOCs and HAPs;
  - The system will have a mechanical interlock to prevent the coating process from proceeding until the receiving thermal oxidizer reaches a minimum of 1,500°F;
  - A mechanical interlock will shut down the coating process if the combustion chamber temperature of the receiving thermal oxidizer is less than 1,400°F;
  - A low leakage control damper will direct emissions from water-based operations to the atmosphere and direct solvent-based operations to a thermal oxidizer. Adhesive Applications will use standard operating procedures to provide redundant confirmation of the direction of flow by use of a visual gauge on the damper;

### **Applicable Regulatory Requirements**

In addition to being subject to the BACT requirements of 310 CMR 7.02(8)(a)2, the surface coating operation is subject to the visible emission requirements of 310 CMR 7.06, the dust, odor, construction and demolition requirements of 310 CMR 7.09 and the noise reduction requirements of 310 CMR 7.10.

The natural gas-fired drying oven burners on Coaters #1, #2, and #3, the two RTO burners, and the new recuperative thermal oxidizer burner are each exempt from plan approval requirements pursuant to 310 CMR 7.02(2)(b)15. The new 8 MMBtu/hr burner will have particulate matter (PM) requirements of 310 CMR 7.02(8)(h) and the inspection, maintenance, testing and recordkeeping requirements in accordance with 310 CMR 7.04(4)(a).

The Permittee has indicated that the Project is subject to 40 CFR Part 60 Subpart RR, the *Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations*, and will satisfy §60.442(a)(2)(i). A VOC/HAP destruction efficiency of 99%, verified through performance testing (Table 3, Provision 7) satisfies the emission limitations. The recordkeeping and reporting requirements of Subpart RR are incorporated into this Plan Approval.

## 2. EMISSION UNIT IDENTIFICATION

Each Emission Unit (“EU”) identified in Table 1 is subject to and regulated by this Plan Approval:

<b>Table 1</b>			
<b>EU</b>	<b>Description</b>	<b>Design Capacity</b>	<b>Pollution Control Device (PCD)</b>
1	Coater #1 – Stik II Surface Coating Line natural gas-fired dryers Solvent and water-based coater	Max. Web Width: 63 inches Web Speed: 50 ft/min  (3) – 2 MMBtu/hr burners	<u>EU #2 AND EU #3</u> One (1) – New Catalytic Products International QUADRANT SRS-14,000 (model #15-7632) Recuperative Thermal Oxidizer with a total 8 MMBtu/hr natural gas-fired Maxon Corporation custom (Circular IncinoPak) burner (or equivalent)  <u>EU #1, EU #2 AND EU #3</u> Two (2) – Existing CIRE Technologies, Inc. (model #1209599RTO) Regenerative Thermal Oxidizers (RTOs) each with a 2 MMBtu/hr natural gas-fired Maxon Corporation Kinemax nozzle burner.
2	Coater #2: DPI surface coating line w/ Boart Manufacturing natural gas-fired dryer Solvent, water, and silicone-based coater	Max. Web Width: 63 inches Web Speed: 50 ft/min  (1) – 3 MMBtu/hr burner	
3	Coater #3: production (toll) coater natural gas-fired dryers Solvent, water, and silicone-based coater	Max. Web Width: 12 inches Web Speed: 20 ft/min  (2) – 0.55 MMBtu/hr burners	

### Table 1 Key:

EU = Emission Unit Number  
ft/min = feet per minute

PCD = Pollution Control Device  
MMBtu/hr = million British thermal Units per hour

### 3. APPLICABLE REQUIREMENTS

#### A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

<b>Table 2</b>			
<b>EU</b>	<b>Operational / Production Limit</b>	<b>Air Contaminant</b>	<b>Emission Limit</b>
1, 2, 3	1. PTE with 100% capture efficiency when applying solvent-based coatings/cleaning solutions	VOC/HAP	-
	2. (2) – CIRE Technologies, Inc. RTOs, model # 1209599RTO with 99% destruction efficiency when applying solvent-based coatings		
	3. 1,500°F minimum operating temperature before start-up of Coater #1, Coater #2, and Coater #3. Minimum thermal oxidizer temperature of 1,400°F thereafter, both readings taken at the downstream end of the combustion chamber		
	4. Minimum air flow of 200 ft/min at all mix stations within the mix room/flammable storage room and flow routed to the RTO		
2, 3 (when controlled by the new CPI oxidizer)	5. PTE with 100% capture efficiency when applying solvent-based coatings/cleaning solutions	VOC/HAP	-
	6. (1) – Catalytic Products International (CPI) recuperative thermal oxidizer, model #15-7632 (or equivalent) with 99% destruction efficiency when applying solvent-based coatings.		

Table 2			
EU	Operational / Production Limit	Air Contaminant	Emission Limit
2, 3 (when controlled by the new CPI oxidizer)	7. 1,500°F minimum operating temperature before start-up of Coater #2 and/or Coater #3. Minimum temperature of 1,400°F thereafter, both readings taken at the downstream end of the combustion chamber	VOC/HAP	-
	8. Minimum air flow of 200 ft/min at all mix stations within the mix room/flammable storage room and air flow routed to the CPI recuperative thermal oxidizer		
	9. $\leq 0.10$ lbs./MMBtu from burner of the CPI recuperative thermal oxidizer	PM	-
3	10. VOC application rate $\leq 23.2$ lbs./hr	VOC	1.0 TPY 0.2 TPM
	11. 75 gallons of clean-up solvent per calendar month		
	12. 900 gallons of clean-up solvent per 12 consecutive months		
	13. HAP application rate $\leq 2.1$ lb/hr	Single HAP	0.1 TPY
		HAP (total)	0.02 TPM
Facility-wide	-	VOC	15.2 TPY 2.0 TPM
		Single HAP	9.9 TPY 2.0TPM
		HAP (total)	15.2 TPY 2.0 TPM

**Table 2 Key:**

EU = Emission Unit Number

VOC = Volatile Organic Compounds

HAP (total) = total Hazardous Air Pollutants.

lbs/hr = pounds per hour

°F = degrees Fahrenheit

$\leq$  = less than or equal to

TPY = tons per consecutive 12-month period, including cleaning materials

HAP (single) = maximum single Hazardous Air Pollutant

TPM = tons per month, including cleaning materials

ft/min = feet per minute

% = percent

RTO = Regenerative Thermal Oxidizer

CPI = Catalytic Products International

**Table 2 Notes:** none.

**B. COMPLIANCE DEMONSTRATION**

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5:

<b>Table 3</b>	
<b>EU</b>	<b>Monitoring and Testing Requirements</b>
1, 2, 3	1. In accordance with the best available control technology provision of 310 CMR 7.02(8)(a)2. and 40 CFR 60.445(g), the Permittee shall install, calibrate, maintain, and operate a monitoring device, such as a manometer, which shall continuously monitor the pressure of each PTE to indicate that the PTE is achieving 100% capture efficiency.
	2. In accordance with the best available control technology provision of 310 CMR 7.02(8)(a)2., the Permittee shall monitor, on a daily basis, the air velocity at all mixing stations within the mix room/flammable storage room to confirm a minimum velocity of 200 feet per minute.
	3. In accordance with 310 CMR 7.02(8)(a)2., audible and visual alarms shall alert the operators if the CIRE Technologies, Inc. RTO temperature drops to 1,450°F.
	4. In accordance with 40 CFR 60.442(e), the Permittee shall install a continuous chart recorder to monitor the CIRE Technologies, Inc. RTO operating temperature at the downstream end of the combustion chamber. The monitoring device shall have an accuracy of the greater of $\pm 0.75$ percent of the temperature being measured expressed in degrees Celsius or $\pm 2.5$ °C.
	5. In accordance with the best available control technology provision of 310 CMR 7.02(8)(a)2., the Permittee shall install a low leakage control damper to direct emissions from water-based operations to the atmosphere and direct solvent-based operations to a thermal oxidizer. The damper shall be equipped with a visual gauge for easy and redundant identification of flow path.



<b>Table 3</b>	
<b>EU</b>	<b>Monitoring and Testing Requirements</b>
1, 2, 3	<p>6. In accordance with 310 CMR 7.02(3)(d), the Permittee shall monitor, on a daily basis, to demonstrate compliance for each calendar month and 12 consecutive months, the emission limits in Table 2. Such monitoring shall include, but is not limited to:</p> <ul style="list-style-type: none"> <li>a. For each coating, as applied: <ul style="list-style-type: none"> <li>i. Date;</li> <li>ii. Trade name;</li> <li>iii. Gallons used;</li> <li>iv. Coating density (Pounds per gallon);</li> <li>v. Pounds of VOC per pound of solids applied;</li> <li>vi. Pounds of HAP per pound of solids applied;</li> <li>vii. Weight percent of VOC;</li> <li>viii. Weight percent HAP;</li> <li>ix. Application rate of coating (lb/hour);</li> <li>x. Calculated VOC application rate (lb/hr);</li> <li>xi. Calculated HAP application rate (lb/hr);</li> <li>xii. Gallons of cleanup solution used;</li> <li>xiii. Pounds of VOC per gallon of cleanup solution; and</li> <li>xiv. Pounds of HAP per gallon of cleanup solution.</li> </ul> </li> </ul>

**Table 3**

EU	Monitoring and Testing Requirements
2, 3 (when routed to the CPI thermal oxidizer)	<p>7. In accordance with 310 CMR 7.02(3)(d), 310 CMR 7.13 and 40 CFR 60.8, the Permittee shall test the PTE capture efficiency of Coater #2 and #3 and the VOC/HAP destruction removal efficiency of the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer within 120 days after startup. The emission testing shall conform to the following requirements:</p> <ul style="list-style-type: none"> <li>a. The testing shall take place under maximum and minimum loading conditions that are representative of the facility's operation;</li> <li>b. The Permittee shall submit a pretest protocol to MassDEP for review at least 45 days prior to the anticipated test date. The protocol shall include a description of the proposed test port locations, sampling equipment, testing procedures, and operating conditions;</li> <li>c. The Permittee shall submit the final emission test report to MassDEP within 45 days after the completion of the compliance stack testing. The report shall, at a minimum, include documentation of all test findings and a description of operating parameters (line speed, coatings used, oxidizer temperatures, etc);</li> <li>d. The Permittee shall conduct performance test procedures in accordance with 40 CFR 60.444(c);</li> <li>e. The Permittee shall follow the test methods and procedures in accordance with 40 CFR 60.446.</li> </ul>
	<p>8. In accordance with 40 CFR 60.442(e), the Permittee shall install a continuous chart recorder to monitor the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer operating temperature at the downstream end of the combustion chamber. The monitoring device shall have an accuracy of the greater of <math>\pm 0.75</math> percent of the temperature being measured expressed in degrees Celsius or <math>\pm 2.5</math> °C.</p>
	<p>9. In accordance with 310 CMR 7.02(8)(a)2., audible and visual alarms shall alert the operators if the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer temperature drops to 1,450°F.</p>
	<p>10. The Permittee shall install a differential pressure monitor to measure silicone dioxide build-up in the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer. The monitor shall alert the operator if clean out is necessary.</p>
Facility-wide	<p>11. At MassDEP's request, the Permittee shall conduct a noise survey, which is in accordance with MassDEP guidelines, to demonstrate that the noise impacts from the operation of the PCDs are in compliance with Regulation 310 CMR 7.10 and the Bureau of Air and Waste Noise Policy No. 90-001. This survey shall be conducted within 60 days MassDEP's request. The Permittee shall submit a pretest protocol to MassDEP for review at least 30 days prior to the anticipated test date. The protocol shall include, but not be limited to, a description of the proposed test locations, sampling equipment, testing procedures, and operating conditions.</p>
	<p>12. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.</p>

<b>Table 3</b>	
<b>EU</b>	<b>Monitoring and Testing Requirements</b>
Facility-wide	13. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13.
	14. At least 30 days prior to emission testing, the Permittee shall submit to MassDEP for approval a stack emission pretest protocol.
	15. Within 45 days after emission testing, the Permittee shall submit to MassDEP a final stack emission test results report.

**Table 3 Key:**

EU = Emission Unit Number  
PTE = Permanent Total Enclosure  
% = percent  
°F = degrees Fahrenheit  
VOC = volatile organic compound  
HAP = Hazardous Air Pollutant  
CPI = Catalytic Products International

CMR = Code of Massachusetts Regulations  
CFR = Code of Federal Regulations  
RTO = regenerative thermal oxidizer  
MassDEP = Massachusetts Department of Environmental Protection  
USEPA = United States Environmental Protection Agency  
PCD = Pollution Control Device

Table 4	
EU	Record Keeping Requirements
1, 2, 3	1. In accordance with 310 CMR 7.02(3)(e), on a daily basis the Permittee shall record the pressure of each PTE on Coaters #1, #2, and #3 and indicate whether or not the PTE is achieving 100% capture efficiency.
	2. In accordance with 310 CMR 7.02(3)(e), the Permittee shall record, on a daily basis, the air velocity at all mix stations within the mix room/flammable storage room to confirm a minimum velocity of 200 feet per minute.
	3. In accordance with 310 CMR 7.02(8)(a)2., the Permittee shall record any instances when the CIRE Technologies, Inc. RTO temperature dropped to 1,450°F or below. A log shall be kept documenting the time of the alarm, cause of alarm, and when the thermal oxidizer resumed normal operation.
	4. In accordance with the best available control technology provision of 310 CMR 7.02(8)(a)2. and 40 CFR 60.445(e), the Permittee shall install, calibrate, maintain and operate a continuous chart recorder or computerized data recorder system that will continuously record the exhaust gas temperature of the CIRE Technologies, Inc. RTO.
	5. In accordance with 40 CFR 60.443(e), the Permittee shall record all 3-hour periods (during actual coating operations) during which the average temperature of the CIRE Technologies, Inc. RTO is more than 50 °F below the average temperature of the device during the most recent performance test complying with §60.442(a)(2).
	6. In accordance with 310 CMR 7.02(3)(e), for each production run, the Permittee shall record: <ul style="list-style-type: none"> <li>a. whether the coating was water-based or solvent-based;</li> <li>b. whether exhaust from each solvent-based coating operation was vented to atmosphere or an in-service thermal oxidizer;</li> <li>c. date, time, and duration of production run; and</li> <li>d. the associated thermal oxidizer temperature for the production run.</li> </ul>

**Table 4**

EU	Record Keeping Requirements
1, 2, 3	<p>7. In accordance with 310 CMR 7.02(3)(e), the Permittee shall prepare and maintain sufficient records to demonstrate compliance for each calendar month. Such records shall include, but are not limited to:</p> <ul style="list-style-type: none"> <li>a. For each coating, as applied: <ul style="list-style-type: none"> <li>i. Date;</li> <li>ii. Trade name;</li> <li>iii. Gallons used;</li> <li>iv. Coating density (Pounds per gallon);</li> <li>v. Pounds of VOC per pound of solids applied;</li> <li>vi. Pounds of HAP per pound of solids applied;</li> <li>vii. Weight percent of VOC;</li> <li>viii. Weight percent HAP;</li> <li>ix. Application rate of coating (lb/hour);</li> <li>x. Calculated VOC application rate (lb/hr);</li> <li>xi. Calculated HAP application rate (lb/hr);</li> <li>xii. Gallons of cleanup solution used;</li> <li>xiii. Pounds of VOC per gallon of cleanup solution; and</li> <li>xiv. Pounds of HAP per gallon of cleanup solution.</li> </ul> </li> </ul>
	<p>8. In accordance with 40 CFR 60.445(d), the Permittee shall maintain a 12 month record of the amount of solvent applied in the coating at the facility.</p>
2, 3 (when routed to the CPI thermal oxidizer)	<p>9. In accordance with 310 CMR 7.02(8)(a)2., the Permittee shall record any instances when the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer temperature dropped to 1,450°F or below. A log shall be kept documenting the time of the alarm, cause of alarm, and when the thermal oxidizer resumed normal operation.</p>
	<p>10. In accordance with the best available control technology provision of 310 CMR 7.02(8)(a)2. and 40 CFR 60.445(e), the Permittee shall install, calibrate, maintain and operate a continuous chart recorder or computerized data recorder system that will continuously record the exhaust gas temperature of the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer.</p>

**Table 4**

EU	Record Keeping Requirements
2, 3 (when routed to the CPI thermal oxidizer)	11. In accordance with 40 CFR 60.443(e), the Permittee shall record all 3-hour periods (during actual coating operations) during which the average temperature of the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer is more than 50 °F below the average temperature of the device during the most recent performance test complying with §60.442(a)(2).
	12. The Permittee shall record any instances of audible or visual alarm indicating the need for tube-side cleaning of the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer and the action taken.
Facility- wide	13. The Permittee shall maintain a copy of all noise survey results on-site, if applicable.
	14. The Permittee shall maintain adequate records on-site to demonstrate compliance status with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15 <sup>th</sup> day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at <a href="http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping">http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping</a> .
	15. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	16. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) and PCD(s) approved herein on-site.
	17. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	18. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s), PCD(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	19. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	20. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	21. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

**Table 4 Key:**

EU = Emission Unit Number  
PTE = Permanent Total Enclosure  
% = percent  
°F = degrees Fahrenheit  
VOC = volatile organic compound  
HAP = Hazardous Air Pollutant  
PCD = Pollution Control Device

CMR = Code of Massachusetts Regulations  
CFR = Code of Federal Regulations  
RTO = regenerative thermal oxidizer  
MassDEP = Massachusetts Department of Environmental Protection  
USEPA = United States Environmental Protection Agency  
SOMP = Standard Operating and Maintenance Procedure  
CPI = Catalytic Products International

<b>Table 5</b>	
<b>EU</b>	<b>Reporting Requirements</b>
1, 2, 3	1. In accordance with 40 CFR 60.447(b), following the initial performance test, the Permittee shall submit quarterly reports to MassDEP of exceedances of the VOC emission limits specified in 40 CFR 60.442. If no such exceedances occur during a particular quarter, a report stating this shall be submitted to the MassDEP semiannually.
	2. In accordance with 40 CFR 60.447(c), the Permittee shall submit reports at the frequency specified in §60.7(c) when the CIRE Technologies, Inc. RTO temperature drops as defined under §60.443(e). If no such periods occur, the owner or operator shall state this in the report. All reports shall be postmarked by the 30th day following the end of each six-month period.
2, 3 (when routed to the CPI thermal oxidizer)	3. The Permittee shall notify MassDEP, Western Region, within 14 days of completion, when the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer has been installed.
	4. In accordance with 40 CFR 60.447(a), the Permittee shall submit to the MassDEP the performance test data and results from the performance test as specified in §60.8(a) of the General Provisions (40 CFR part 60, subpart A).
	5. In accordance with 40 CFR 60.447(c), the Permittee shall submit reports at the frequency specified in §60.7(c) when the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer temperature drops as defined under §60.443(e). If no such periods occur, the owner or operator shall state this in the report. All reports shall be postmarked by the 30th day following the end of each six-month period.
Facility- wide	6. The noise survey results shall be submitted to MassDEP's WERO, in writing, attention BAW Permit Chief, within 30 days of the completion of testing, if applicable.
	7. The Permittee shall, by January 31st of each year, submit to MassDEP an annual summary of the 12 monthly reports from the previous calendar year. The report shall summarize emissions for: 1) each calendar month, and 2) for each rolling twelve month period (current month plus prior eleven months) for each month.
	8. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).

<b>Table 5</b>	
<b>EU</b>	<b>Reporting Requirements</b>
Facility-wide	9. The Permittee shall notify the Western Regional Office of MassDEP, BAW Section Chief by telephone: (413) 755-2115, email: marc.simpson@state.ma.us, or fax : (413) 784-1149, as soon as possible, but no later than three (3) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to the Section Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	10. The Permittee shall report annually to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.
	11. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30-days from MassDEP's request.

**Table 5 Key:**

EU = Emission Unit Number  
BAW = Bureau of Air and Waste  
VOC = volatile organic compound

CMR = Code of Massachusetts Regulations  
CFR = Code of Federal Regulations  
CPI = Catalytic Products International



#### 4. **SPECIAL TERMS AND CONDITIONS**

A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 6 below:

<b>Table 6</b>	
<b>EU</b>	<b>Special Terms and Conditions</b>
1, 2, 3	<p>1. The Permittee shall institute the following BMPs:</p> <ul style="list-style-type: none"> <li>a. Store all VOC-containing materials used for surface preparation, cleaning, and rework in closed containers;</li> <li>b. Ensure that mixing and storage containers used for VOC-containing materials used for surface preparation, cleaning and rework are kept closed at all times except when depositing or removing these materials;</li> <li>c. Minimize spills of VOC-containing materials used for surface preparation, cleaning, and rework;</li> <li>d. Convey VOC-containing materials used for surface preparation, cleaning, and rework from one location to another in closed containers or pipes;</li> <li>e. Minimize VOC emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that: <ul style="list-style-type: none"> <li>i. equipment cleaning is performed without atomizing the cleanup solvent; and</li> <li>ii. all spent solvent is captured in closed containers;</li> <li>iii. Store and dispose of all absorbent materials, such as cloth or paper that are contaminated with VOC-containing materials used for surface preparation, cleaning, and rework in non-absorbent containers that shall be kept closed except when placing materials in or removing materials from the container.</li> </ul> </li> </ul>
	<p>2. In accordance with the best available control technology provision of 310 CMR 7.02(8)(a)2., the Permittee shall conduct all cleaning operations on the coater within the PTE which shall be routed to an operational CIRE Technologies, Inc. RTO.</p>
	<p>3. In accordance with 310 CMR 7.02(8)(a)2., the Permittee shall ensure a minimum 1 second residence time in the combustion chamber of the CIRE Technologies, Inc. RTO.</p>
	<p>4. In accordance with 310 CMR 7.02(8)(a)2., the burner of the CIRE Technologies, Inc. RTO shall be fired on natural gas only.</p>

<b>Table 6</b>	
<b>EU</b>	<b>Special Terms and Conditions</b>
1, 2, 3	5. In accordance with the best available control technology provision of 310 CMR 7.02(8)(a)2., water-based coatings shall be limited to a maximum VOC/HAP content of 0.2 pounds per pound of solids applied, before control and with a maximum VOC/HAP content of 3% by weight. Coatings with a VOC/HAP content above this limit shall be vented to a preheated CIRE Technologies, Inc. RTO.
	6. In accordance with 310 CMR 7.02(8)(a)2., the Permittee shall install an interlock that prevents operation without the appropriate CIRE Technologies, Inc. RTO preheated to 1,500°F. The temperature of the thermal oxidizer shall be $\geq 1,400^{\circ}\text{F}$ when applying a solvent-based coating or cleaner.
	7. In accordance with 40 CFR §60.443(j), Startups and shutdowns are normal operation for this source category. Emissions from these operations are to be included when determining if the standard specified at §60.442(a)(2) is being attained.
	8. Each individual CIRE Technologies, Inc. RTO shall control EU #1 or EU #2 (as well as EU #3 and the Mix Room/Flammable Storage Room), but not EU #1 and EU #2 concurrently.
2, 3 (when routed to the CPI thermal oxidizer)	9. In accordance with 310 CMR 7.02(8)(a)2., the Permittee shall ensure a minimum 1.21 seconds residence time in the combustion chamber of the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer.
	10. In accordance with 310 CMR 7.02(8)(a)2., the burner of the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer shall be fired on natural gas only.
	11. In accordance with the best available control technology provision of 310 CMR 7.02(8)(a)2., water-based coatings shall be limited to a maximum VOC/HAP content of 0.2 pounds per pound of solids applied, before control and with a maximum VOC/HAP content of 3% by weight. Coatings with a VOC/HAP content above this limit shall be vented to a preheated CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer.
	12. In accordance with 310 CMR 7.02(8)(a)2., the Permittee shall install an interlock that prevents operation without the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer preheated to 1,500°F. The temperature of the thermal oxidizer shall be $\geq 1,400^{\circ}\text{F}$ when applying a solvent-based coating or cleaner.
	13. In accordance with the best available control technology provision of 310 CMR 7.02(8)(a)2., the Permittee shall conduct all cleaning operations on the coater within the PTE which shall be routed to an operational CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer.
	14. In accordance with 310 CMR 7.04(4)(a), the Permittee shall inspect and maintain the burner on the CPI QUADRANT SRS-14,000 (or equivalent) recuperative thermal oxidizer in accordance with the manufacturers recommendations and test for efficient operation at least once in each calendar year. The results of said inspection, maintenance, and testing and the date upon which it was performed shall be recorded and posted conspicuously on or near the facility.

Facility-wide	15. The Permittee is subject to the Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations of 40 CFR Part 60 Subpart RR., 40 CFR Part 60.440 through 60.447, in which authority has been delegated to the MassDEP, and shall comply with all applicable requirements within this subpart.
	16. A log of all noise complaints and response to the complaint shall be kept onsite for tracking purposes and to assure that action is taken to address the issue.
	17. Any prior Plan Approvals issued under 310 CMR 7.02 shall remain in effect unless specifically changed or superseded by this Plan Approval. The Facility shall not exceed the emission limits and shall comply with approved conditions specified in the prior Plan Approval(s) unless specifically altered by this Plan Approval.

**Table 6 Key:**

EU = Emission Unit Number	CMR = Code of Massachusetts Regulations
°F = degrees Fahrenheit	RTO = regenerative thermal oxidizer
PTE = permanent total enclosure	VOC = Volatile Organic Compounds
CFR = Code of Federal Regulations	BMP = best management practice
≥ = greater than or equal to	CPI = Catalytic Products International
MassDEP = Massachusetts Department of Environmental Protection	

- B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including, but not limited to, rain protection devices known as “shanty caps” and “egg beaters.”

- C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

<b>Table 7</b>				
<b>EU</b>	<b>Stack Height Above Ground (feet)</b>	<b>Stack Inside Exit Dimensions (feet)</b>	<b>Stack Gas Exit Velocity Range (feet per second)</b>	<b>Stack Gas Exit Temperature Range (°F)</b>
1	>29	1.33	45	~ 175
2	>29	1.33	45	~ 175
3	>29	1.33	45	~ 175
RTO #1	>29	2.33	60	200-550
RTO #2	>29	2.33	60	200-550
CPI Oxidizer #3	>45	>10	45	220-360

**Table 7 Key:**

EU = Emission Unit Number  
> = greater than

°F = Degree Fahrenheit  
~ = estimated

## **5. GENERAL CONDITIONS**

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

- J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

## **6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT**

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain “Fail-Safe Provisions,” which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

## **7. APPEAL PROCESS**

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Amy Stratford by telephone at (413) 755-2144, or in writing at the letterhead address.

*This final document copy is being provided to you electronically by the  
Department of Environmental Protection. A signed copy of this document  
is on file at the DEP office listed on the letterhead.*

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Marc Simpson  
Section Chief  
Bureau of Air and Waste

Enclosure

ecc: MassDEP/Boston - Yi Tian  
David P. Horowitz, P.E., Tighe & Bond, Inc.  
Tim Kucab, Tighe & Bond, Inc.